

Claims

[c1] We claim as our invention:

1. A golf club head comprising:
a face component composed of a metal material, the
face component having striking plate portion and a re-
turn portion, the striking plate portion having a thick-
ness in the range of 0.010 inch to 0.250 inch and the re-
turn portion having a thickness ranging from 0.010 inch
to 0.250 inch, the return portion extending a distance
ranging 0.25 inch to 1.5 inches from a perimeter of the
striking plate portion; and
an aft-body composed of a metal material selected from
the group consisting of magnesium alloys, aluminum al-
loys, magnesium and aluminum, the aft-body having a
crown portion, a sole portion and a ribbon portion, the
aft-body attached to the return portion of the face com-
ponent, the aft-body having at least one weight cavity
for mass placement;
wherein the golf club head has a coefficient of restitution
of 0.80 to 0.94.

[c2] 2. The golf club head according to claim 1 wherein the
striking plate portion has a thickness in the range of

0.055 inch to 0.125 inch.

- [c3] 3. The golf club head according to claim 1 wherein the striking plate has a variable face thickness.
- [c4] 4. The golf club head according to claim 1 further comprising at least one weighting member disposed within the at least one weight cavity, the weighting member having a mass ranging from 2 grams to 20 grams.
- [c5] 5. The golf club head according to claim 1 further comprising a skid plate covering the at least one weight cavity.
- [c6] 6. The golf club head according to claim 1 wherein the aft-body is composed of a magnesium alloy.
- [c7] 7. The golf club head according to claim 1 wherein the striking plate portion has an aspect ratio no greater than 1.7.
- [c8] 8. The golf club head according to claim 1 wherein the aft-body is composed of an injection molded metal material.
- [c9] 9. The golf club head according to claim 1 wherein the golf club head has a volume ranging from 290 cubic centimeters to 600 cubic centimeters.

- [c10] 10. The golf club head according to claim 1 wherein the moment of inertia about the Izz axis of the golf club head is greater than 3000 grams-centimeter squared.
- [c11] 11. The golf club head according to claim 1 wherein the face component is composed of a metal material selected from the group consisting of titanium alloy, amorphous metal, stainless steel and maraging steel.
- [c12] 12. A golf club head comprising:
 - a face component composed of a metal material, the face component having a striking plate portion and a return portion, the striking plate portion having a thickness in the range of 0.010 inch to 0.250 inch and the return portion having a thickness ranging from 0.010 inch to 0.250 inch, the return portion extending a distance ranging 0.25 inch to 1.5 inches; and
 - an aft-body comprising an upper section and a lower section, the upper section comprising a crown portion and an upper ribbon portion, the lower section comprising a sole portion and a lower ribbon portion, the aft-body composed of a metal material selected from the group consisting of magnesium alloys, aluminum alloys, magnesium and aluminum, the aft-body attached to the return portion of the face component, the aft-body having a thickness ranging from 0.015 inch to 0.100 inch;wherein the moment of inertia about the Izz axis

through the center of gravity is greater than 3000 grams-centimeter squared, and the moment of inertia about the Iyy axis through the center of gravity is greater than 1900 grams-centimeter squared.

- [c13] 13. The golf club head according to claim 12 wherein the face component is composed of a metal material selected from the group consisting of titanium alloy, amorphous metal, stainless steel and maraging steel.
- [c14] 14. A golf club head comprising:
 - a face component composed of a metal material, the face component having a striking plate portion and a return portion, the striking plate portion having a thickness in the range of 0.010 inch to 0.250 inch, the return portion extending a distance ranging 0.25 inch to 1.5 inches from a perimeter of the striking plate portion; and
 - an aft-body comprising an upper section and a lower section, the upper section comprising a crown portion and an upper ribbon portion, the lower section comprising a sole portion and a lower ribbon portion, the aft-body composed of a metal material selected from the group consisting of magnesium alloys, aluminum alloys, magnesium and aluminum, the aft-body attached to the return portion of the face component, the aft-body having a thickness ranging from 0.015 inch to 0.100 inch;
 - wherein the golf club head has a volume ranging from

350 cubic centimeters to 525 cubic centimeters and a mass ranging from 175 grams to 225 grams.

- [c15] 15. The golf club head according to claim 14 wherein the face component is composed of a metal material selected from the group consisting of titanium alloy, amorphous metal, stainless steel and maraging steel.
- [c16] 16. A golf club head comprising:
 - a face component composed of a titanium alloy material and comprising a return portion and a striking plate portion, the striking plate portion having concentric regions of varying thickness with the thickest region about the center of the striking plate portion; and
 - an aft-body comprising an upper section and a lower section, the upper section comprising a crown portion, an upper ribbon portion and an inward recessed section, the lower section comprising a sole portion, a lower ribbon portion and an inward recessed section, the aft-body composed of an injection molded magnesium alloy material, the aft-body having a thickness ranging from 0.010 inch to 0.100 inch, the return portion overlapping the inward recessed portion and attached to the inward recessed portion, the ribbon portion having a heel weighting cavity, a rear weighting cavity and a toe weighting cavity.

- [c17] 17. The golf club head according to claim 16 wherein the crown portion, the sole portion, the ribbon portion and the return portion define a gap, the gap also defined by an exterior surface of the inward recessed portion, the gap having a distance from an edge of the return portion to an exposed edge of the aft-body ranging from 0.02 inch to 0.09 inch.
- [c18] 18. The golf club head according to claim 16 wherein the rear weighting cavity is accessible from an exterior of the aft-body, and further comprising a skid plate covering the rear weighting cavity.